Amendments to the Abstract:

Please substitute the following version of the Abstract, with changes shown by strikethrough (for deletion) or underlining (for added matter)

ABSTRACT OF THE DISCLOSURE

~~A method of forming a coating on a substrate using a low pressure plasma spray, using a coating material in the form of a powder beam for spraying onto a surface of a substrate. The method includes operating the plasma spray to produce a plasma stream which delivers the coating material to the substrate, wherein the coating material in the powder beam is at least partially melted, the operating including introducing a plasma gas into a plasma gun to establish plasma gas operating conditions; generating a plasma intensity sufficiently high enough to vaporize approximately 5-30% of the powder coating material; maintaining a powder conveying rate sufficiently low enough, and maintaining a process pressure sufficiently low enough, and maintaining a gas flow rate sufficiently low enough to form an anisotropically structured coating having anisotropic columnar microstructures aligned perpendicular to the substrate surface having transitional zones in which material-deficient zones bound the columnar particles at their sides.~~

A method for the manufacture of a thermally insulating layer system on a metallic substrate or base body, wherein the layer system includes at least one anisotropically structured thermally insulating layer having elongate particles is disclosed. In accordance with the method the thermally insulating layer is applied by an LPPS thin film process in which a coating material in the form of a powder stream is sprayed onto a surface of a metallic substrate, with the coating material containing oxide ceramic components, being injected at a low process pressure which is in the range between 50 and 2000 Pa by means of a feed gas into a plasma which defocuses the powder stream and being partly or completely melted there, with a plasma with an adequately high specific enthalpy being generated, with the process gas for the generation of the plasma being a mixture of inert gases with a total gas flow in the range from 30 to 150 SPLM and with the specific enthalpy of the plasma being generated by the output of an effective power which

lies in the range from 40 to 80 kW and can be empirically determined so that a substantial proportion of the coating material amounting to at least 5 % by weight passes into the vapor phase and an anisotropically structured thermally insulating layer arises on the substrate, wherein elongate particles in this thermally insulating layer, which form an anisotropic microstructure are aligned substantially perpendicular to the substrate surface and transition regions with little material delimit the particles relative to one another.